loss or retrievable with EDR data ex-
traction tools.

X-direction means in the direction of
the vehicle X-axis, which is parallel to
the vehicle's longitudinal centerline.
The X-direction is positive in the direc-
tion of forward vehicle travel.

Y-direction means in the direction of
the vehicle Y-axis, which is perpen-
dicular to its X-axis and in the same
horizontal plane as that axis. The Y-di-
rection is positive from left to right,
from the perspective of the driver when
seated in the vehicle facing the direc-
tion of forward vehicle travel.

Z-direction means in the direction of
the vehicle Z-axis, which is perpen-
dicular to the X- and Y-axes. The Z-di-

rection is positive in a downward direc-
tion.

§ 563.6 Requirements for vehicles.

Each vehicle equipped with an EDR
must meet the requirements specified
in § 563.7 for data elements, § 563.8 for
data format, § 563.9 for data capture,
§ 563.10 for crash test performance and
survivability, and § 563.11 for informa-
tion in owner's manual.

§ 563.7 Data elements.

(a) *Data elements required for all vehi-
cles.* Each vehicle equipped with an
EDR must record all of the data ele-
ments listed in Table I, during the in-
terval/time and at the sample rate
specified in that table.

TABLE I.—DATA ELEMENTS REQUIRED FOR ALL VEHICLES EQUIPPED WITH AN EDR

Data element	Recording interval/time [1] (relative to time zero)	Data sample rate samples per second
Delta-V, longitudinal	0 to 250 ms	100
Maximum delta-V, longitudinal	0–300 ms	N.A.
Time, maximum delta-V	0–300 ms	N.A.
Speed, vehicle indicated	−5.0 to 0 sec	2
Engine throttle, % full (or accelerator pedal, % full)	−5.0 to 0 sec	2
Service brake, on/off	−5.0 to 0 sec	2
Ignition cycle, crash	−1.0 sec	N.A.
Ignition cycle, download	At time of download	N.A.
Safety belt status, driver	−1.0 sec	N.A.
Frontal air bag warning lamp, on/off	−1.0 sec	N.A.
Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, driver.	Event	N.A.
Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, right front passenger.	Event	N.A.
Multi-event, number of events (1,2)	Event	N.A.
Time from event 1 to 2	As needed	N.A.
Complete file recorded (yes, no)	Following other data	N.A.

[1] Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is −0.1 to 1.0
sec (e.g., T = −1 would need to occur between −1.1 and 0 seconds.)

(b) *Data elements required for vehicles
under specified conditions.* Each vehicle
equipped with an EDR must record
each of the data elements listed in col-
umn 1 of Table II for which the vehicle

meets the condition specified in col-
umn 2 of that table, during the inter-
val/time and at the sample rate speci-
fied in that table.

TABLE II.—DATA ELEMENTS REQUIRED FOR VEHICLES UNDER SPECIFIED CONDITIONS

Data element name	Condition for requirement	Recording interval/ time [1] (relative to time zero)	Data sample rate (per second)
Lateral acceleration	If recorded [2]	0–250 ms	500
Longitudinal acceleration	If recorded	0–250 ms	500
Normal acceleration	If recorded	0–250 ms	500
Delta-V, lateral	If recorded	0–250 ms	100
Maximum delta-V, lateral	If recorded	0–300 ms	N.A.
Time maximum delta-V, lateral	If recorded	0–300 ms	N.A.
Time for maximum delta-V, resultant	If recorded	0–300 ms	N.A.
Engine rpm	If recorded	−5.0 to 0 sec	2